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**METHODS FOR PRODUCING POLYPEPTIDES
IN CYCLOHEXADEPSIPEPTIDE-DEFICIENT CELLS**

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Cross-Reference to Related Application

This application is a continuation-in-part of pending U.S. application Serial No. 09/229,862 filed January 13, 1999, ^{how abandoned,} which application is fully incorporated herein by reference.

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Background of the Invention

Field of the Invention

The present invention relates to methods for producing heterologous polypeptides in cyclohexadepsipeptide-deficient filamentous fungal mutant cells. The present invention also relates to mutants of filamentous fungal cells and methods for obtaining the mutant cells. The present invention also relates to isolated cyclohexadepsipeptide synthetases and isolated nucleic acid sequences encoding the cyclohexadepsipeptide synthetases. The present invention also relates to nucleic acid constructs, vectors, and host cells comprising the nucleic acid sequences as well as methods for producing the cyclohexadepsipeptide synthetases. The present invention further relates to cyclohexadepsipeptides produced by the cyclohexadepsipeptide synthetases.

Description of the Related Art

Depsipeptides constitute a large class of peptide-related compounds derived from hydroxy and amino acids joined by amide and ester linkages. Many members of this class of compounds are biologically active and include antibiotics, alkaloids, and proteins (Shemyakin *et al.*, 1969, *Journal of Membrane Biology* 1: 402-430). Examples include the enniatins, beauvericin, and bassianolide.

Enniatins are cyclohexadepsipeptide phytoxins with ionophoretic properties produced by various species of actinomycetes and filamentous fungi, particularly strains of *Fusarium*. They are composed of alternating D-2-hydroxyisovaleric acid residues and L-amino acids or